

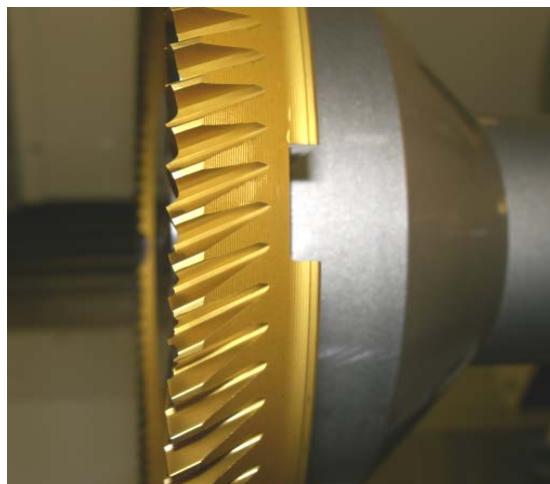
Step Cutter resharpening

A12-212

Step cutters are used for gear production in shaving process. The cutter can be used for inside gear shaving, as well as for outside shaving of big gears.

Step cutters can be sharpened using a cup, straight 1A1 or V-shape wheel with corresponding angle. Usage of cup wheel is limited to cutter size due to interference with the opposite tooth group.

The given example is a shaper cutter with Ø155mm, 71 teeth and 16mm tooth height. Ground with a 1A1-CBN wheel.



1. Cycletime for Production

Tool specifications	
Diameter 155 mm, 71 teeth, tooth height 15 mm	
Material HSS	
Operations	
	Probe Dress Roughing Dress Finishing
Feed [mm/Min]	2000
Infeed / pass [mm]	0.005
Wheel speed [m/s]	33
Used wheels	
Grinding time [min]	1.0 1.5 78.0 1.5 18.0
Total cycle time	~ 100 min

The mentioned cycle times are indicative. The material to be ground, different grinding wheels or other coolants can influence the cycle times considerably.

There are 3 types of indexing available:
Forward, backward
or come together

Total material removal
 $= 4 \times 0.05 \text{ mm} = 0.2 \text{ mm}$

2. Used Grinding Wheels

1A1 90° vitrified CBN Ø50 B91



3. Machine and Software Requirements

Machines: 5 axes CNC grinder: Corvus GDS / Gemini DMR

Control: Fanuc 160i / 310i

Coolant: Synthetic Oil, pressure 6 bar

Software: Quinto 5.1.0 or higher

responsible engineer: SIW, 08.2010

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